

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (original): A method of joining plastics comprising:

2 a) creating a first surface diffusion zone containing  
3 therein a first polymerizable material, wherein said first  
4 surface diffusion zone is adjacent to a first surface of a  
5 first workpiece; and,

6 b) creating a second surface diffusion zone  
7 containing therein a second polymerizable material, wherein  
8 said second surface diffusion zone is adjacent to a second  
9 surface of a second workpiece, and wherein said first  
10 polymerizable material and said second polymerizable  
11 material are capable of bonding with each other; and,

12 c) bringing said first surface and said second  
13 surface into intimate contact at a bonding surface; and,

14 d) causing said first polymerizable material and said  
15 second polymerizable material to react and join across said  
16 bonding surface.

1 Claim 2 (original): A method of joining plastics as in  
2 claim 1 wherein at least one of said first surface or said  
3 second surface has at least one microfeature therein.

1 Claim 3 (original): A method of joining plastics as in  
2 claim 1 wherein at least one of said first workpiece or said  
3 second workpiece is a high-performance engineered plastic.

1 Claim 4 (original): A method of joining plastics as in  
2 claim 3 wherein at least one of said first workpiece or said  
3 second workpiece is selected from the group consisting of  
4 polyetherimides, polyphenylenes, and polyether-ether-  
5 ketones.

1 Claim 5 (original): A method of joining plastics as in  
2 claim 4 wherein said first workpiece and said second  
3 workpiece are polyphenylenes and said first polymerizable  
4 material and second polymerizable material are mixtures of  
5 styrene and divinylbenzene.

1 Claim 6 (original): A method of joining plastics as in  
2 claim 5 wherein both of said mixtures have a ratio of  
3 approximately 9:1 by volume of styrene to divinylbenzene.

1 Claim 7 (original): A method of joining plastics comprising:  
2 a) creating a first surface diffusion zone containing  
3 therein a polymerizable material, wherein said first surface  
4 diffusion zone is adjacent to a first joining surface of a  
5 first workpiece; and,

6 b) providing a second workpiece having a second  
7 joining surface; and,

8 c) bringing said first joining surface and said  
9 second joining surface into intimate contact at a bonding  
10 surface; and,

11 d) causing said polymerizable material to react and  
12 join across said bonding surface.

1 Claim 8 (original): A method of joining plastics as in  
2 claim 7 wherein at least one of said first joining surface  
3 or said second joining surface has at least one microfeature  
4 therein.

1 Claim 9 (original): A method of joining plastics as in  
2 claim 7 wherein at least one of said first workpiece or said  
3 second workpiece is a high-performance engineered plastic.

1 Claim 10 (original): A method of joining plastics as in  
2 claim 9 wherein at least one of said first workpiece or said  
3 second workpiece is selected from the group consisting of  
4 polyetherimides, polyphenylenes, and  
5 polyether-ether-ketones.

1 Claim 11 (original): A method of joining plastics as in  
2 claim 10 wherein said first workpiece is a polyphenylene,  
3 said second workpiece is a polyetherimide and said  
4 polymerizable material is styrene.

Claims 12-21 (canceled).